

CLAIMS:

1. A method of developing muscle mass in a mammal by stimulating, recruiting and mobilizing muscle cells to a specific muscle mass, the method comprising administering nicotine or nicotine acetylcholine receptor agonist (nAChR) to a mammal in an amount sufficient combined with exercise to increase muscle mass.
2. The method of claim 1 wherein the muscle cells are differentiated from stem cells.
3. The method of claim 2 wherein the stem cells are endogenous.
4. The method of claim 2 wherein the stem cells are exogenous.
5. The method of claim 1 wherein exercise causes the muscle mass to exceed the cell replenishing effects of a normal life style.
6. The method of claim 5 wherein the physiologic response to the exercise cause the muscle cells of the muscle mass to express nicotinic acetylcholine receptors.
7. The method of claim 6 including the step of using nicotine or a nAChR agonist to bind said nicotinic acetylcholine receptors.
8. The method of claim 7 wherein said binding stimulates the release of growth factors, including human growth hormone (HGH), vascular endothelial growth factor (VEGF), basic fibroblast growth factors (bFGF) and other chemokines, cytokines and attractants to stem cell recruitment, migration and mobilization at the target physiologic tissue or muscle mass.
9. The method of claim 8 wherein said stem cells differentiate into the phenotype of the mobilized muscle mass or physiologic tissue.

10. The method of claim 5 wherein exercise causes an abnormal physiologic response in the muscle group thereby causing release of various metabolic, catecholamine, cytokines, chemokines, and/or inflammatory response to further enhance the increase of tissue mass.
11. The method of claim 1 wherein the nicotine or nicotine acetylcholine receptor agonist (nAChR) is administered in an amount sufficient to produce thermogenesis.